FLOWSERVE

TECHNICAL BULLETIN

# SIHI® KPH 85229

## Two-Stage Liquid Ring Compressor

*Experience In Motion*

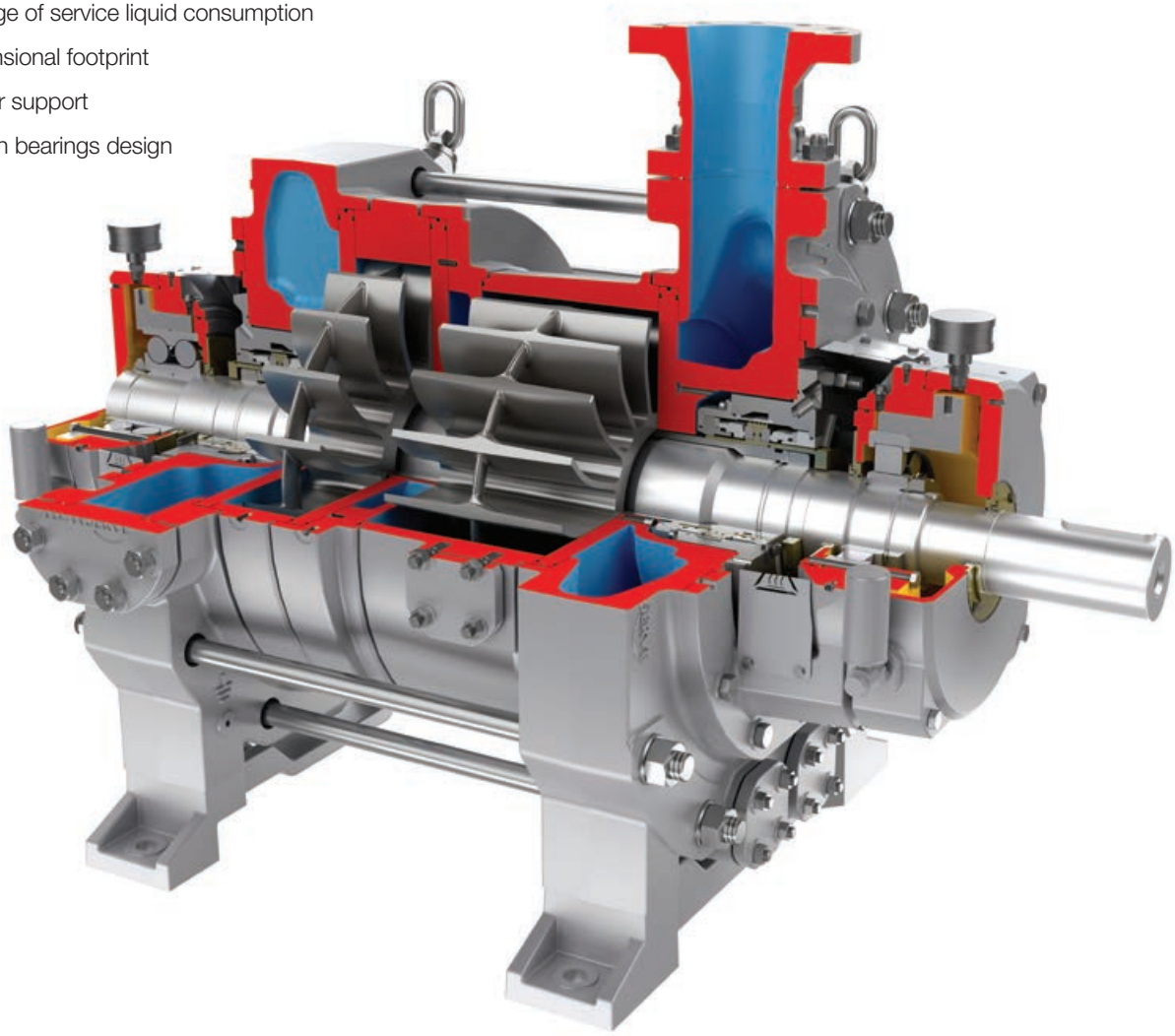
# Proven liquid ring compressor technology

SIHI® KPH 85229 liquid ring compressors from Flowserve are designed to compress different kinds of gases and vapors. They are most commonly used in applications where safety, reliability and special process conditions are required.

SIHI liquid ring compressors are well-proven. They are able to operate under the most severe process conditions and use any type of service liquid. This feature makes SIHI liquid ring compressors unique for special applications where process contamination is prohibitive.

## Benefits

- Compliant with API 681
- Best-in-class isothermal efficiency
- Discharge connection can be selected on either right or left side
- Adjustable range of service liquid consumption
- Smallest dimensional footprint
- Integrated rotor support
- Sturdy between bearings design
- Low vibration



# Applications

SIHI KPH 85229 two-stage liquid ring compressors are engineered to operate in applications where gas must be compressed carefully to an over-pressure up to 10 barg (145 psig) with a suction capacity up to 2,100 m³/h (1,235 cfm).

## Principle industries

- Chemical — basic, biofuels and petrochemicals
- Oil and gas — downstream processing
- Power — geothermal
- Water — treatment and desalination
- Other industries

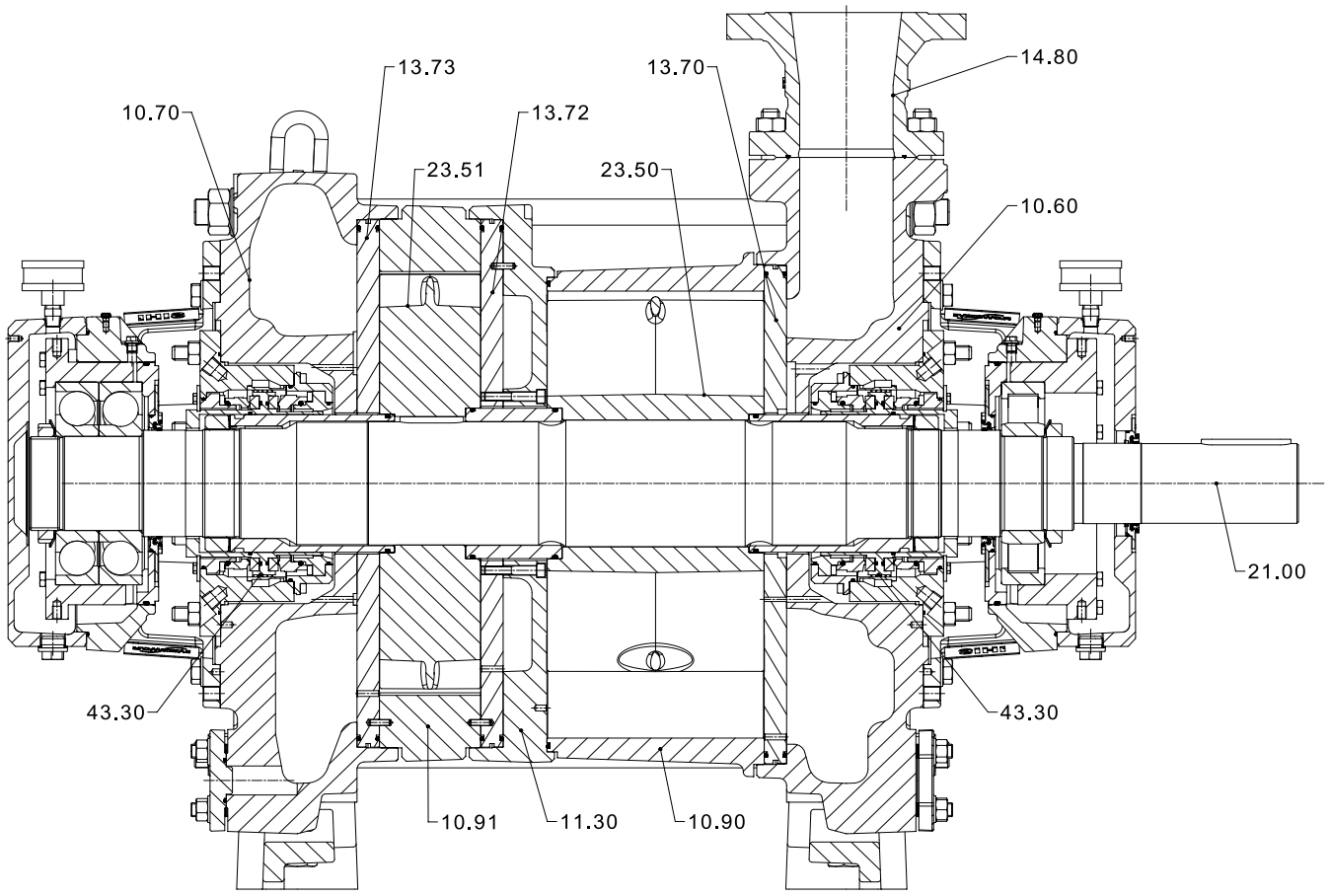
## Key applications

- Flare gas recovery
- Vapor recovery
- Vinyl chloride monomer recovery
- Dry and wet chlorine compression
- Condensable gases
- Non-condensable gases
- Waste gas disposal
- Gas transfer

## General technical data

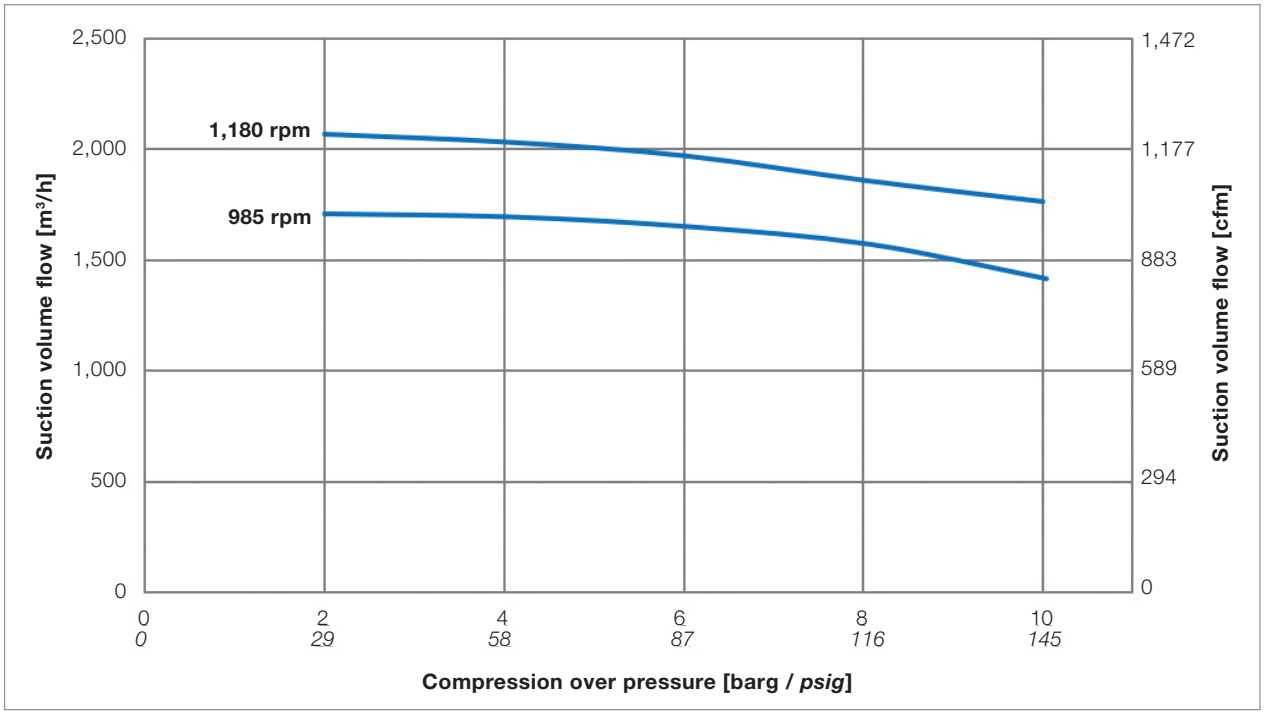
| Parameter | | Model KPH 85229 |
|---|---|---|
| **Speed** | **50 Hz**<br>**60 Hz** | 985 rpm<br>1,180 rpm |
| **Max. compression over-pressure** | | 10 barg (145 psig) |
| **Hydrostatic pressure test (over-pressure)** | | 22 barg (319 psig) |
| **Moment of inertia of the rotating pump parts and of the water filling** | | 9.93 kg•m² (235.6 lb•ft²) |
| **Average sound pressure level in 1 m (3.3 ft) distance** | | 84 dB (A) |
| **Max. gas inlet temperature** | | 100°C (212°F) |
| **Service liquid (depending on application)**<br>• volume up to shaft level | | 101 dm³ (5.37 ft³) |

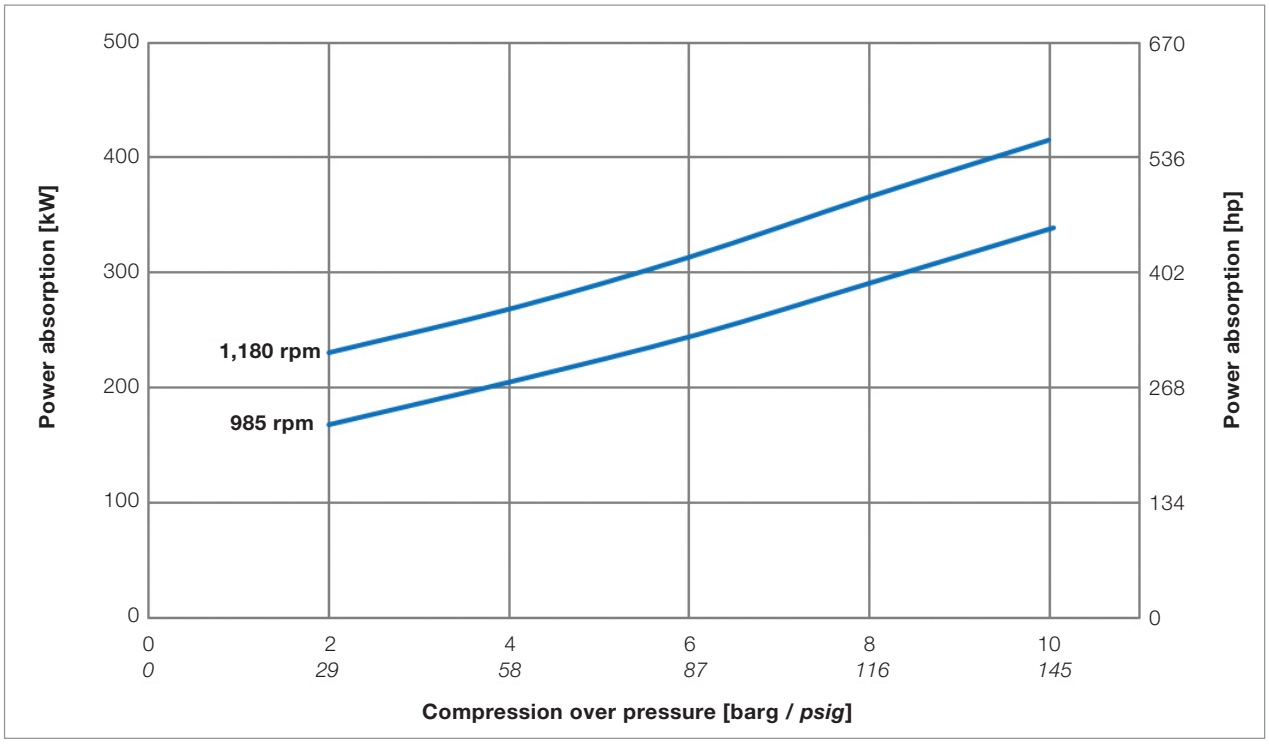
## Sectional drawing and material design




| Item. | Component | Standard Material Design |
|---|---|---|
| 10.60/10.70 | Suction/Discharge casing | ASTM A351 CF3M |
| 10.90/10.91 | Central body | ASTM A351 CF3M |
| 11.30 | Intermediate piece | ASTM A351 CF3M |
| 13.70/13.72/13.73 | Guide disc | ASTM A240 316L |
| 14.80 | Flange connection | ASTM A351 CF3M |
| 21.00 | Shaft | ASTM A276, Type 420 |
| 23.50/23.51 | Vane wheel impeller | ASTM A890 Grade 4A |
| 53.10 | Clamping sleeve | ASTM A276 UNS S31803 |
| 43.30 | Mechanical seal | Flowserve HSH/HSH |

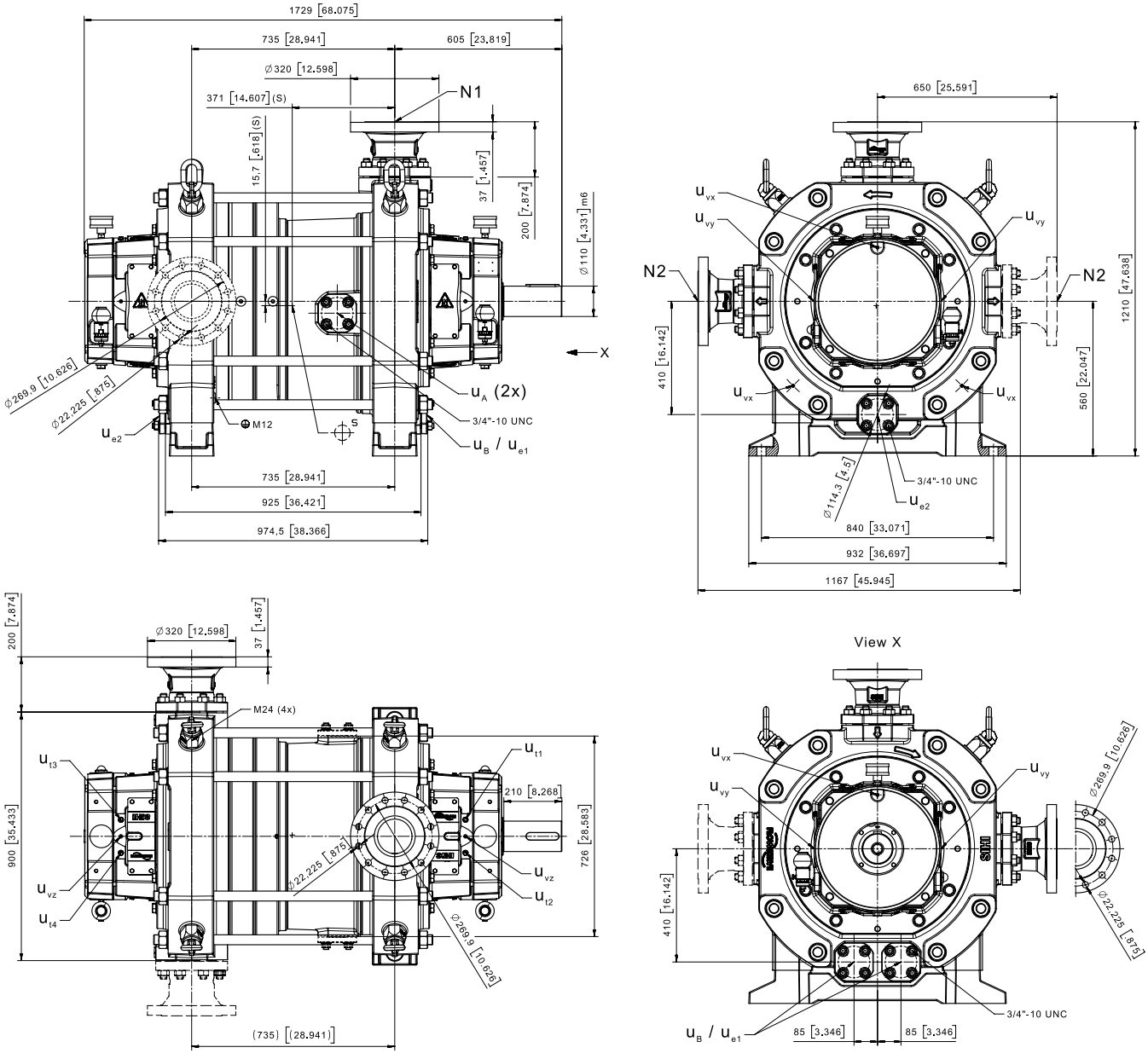
## Suction volume flow and power absorption




The values indicated for inlet volume flow and power absorption are valid for compression of atmospheric air at 20°C (68°F) and 1,013 mbar (760 torr) to the respective compression pressure with water at 20°C (68°F) as a service liquid. Tolerance of the curve values is 10%. The data indicated will change with deviating service conditions, such as deviating physical data of handled gas or of the service liquid used. Data will also change when handling entrained liquid, at suction pressure deviating from atmospheric pressure, or handling gas-vapor mixtures.

## Dimensions, mm [in]




Weight: 3,140 kg (6,923 lb)

## Connections

| POS | Size | Standard | Designation |
|---|---|---|---|
| N1 | 6 in | ASME B16.5 Class 300 RF, seal face $R_a$ 3.2 | Gas inlet |
| N2 | 6 in | ASME B16.5 Class 300 RF, seal face $R_a$ 3.2 | Gas outlet |
| $u_B$ | 1½ in | ASME B16.5 Class 300 RF, seal face $R_a$ 3.2 | Connection for service liquid |
| $u_{e\ 1\ to\ 2}$ | 1½ in | ASME B16.5 Class 300 RF, seal face $R_a$ 3.2 | Drain |
| $u_A$ | 1½ in | ASME B16.5 Class 300 RF, seal face $R_a$ 3.2 | Drain/Extraction |
| $u_{t\ 1\ to\ 4}$ | G¼ | | Connection for bearing temperature sensor |
| $u_{v\ x\ to\ z}$ | M8 | | Connection for vibration sensor |

## Service liquid requirement dependent on speed

| Compressor speed | Service liquid flow rate | Service liquid pressure at uB |
|---|---|---|
| 985 rpm | 18 m³/h (79 gal US/min) | 1.9 barg (27.6 psig) |
| 1,185 rpm | 18 m³/h (79 gal US/min) | 2.1 barg (30.5 psig) |

Details must be clarified and confirmed with the supplier, as pressures, speed, kind of gas and service liquid need to be taken into consideration.

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